WHAT IS CLAIMED IS:

1. A process for characterizing DNA comprising the step of isolating nucleic acids, wherein the step of isolating comprises the steps of:

(a) contacting a biological material that contains DNA with a solid support treated with a lysing reagent;

(b) treating the biological material that contains DNA with a DNA purifying reagent; and

(c) purifying the DNA from the remainder of the biological material,

wherein the lysing reagent is bound to the solid support .

2. A process for characterizing DNA comprising the step of isolating nucleic acids, wherein the step of isolating comprises the steps of:

(a) contacting a biological material that contains DNA with a solid support;

(b) treating the biological material that contains DNA with a DNA purifying reagent;

(c) applying a DNA eluting reagent to the solid support; and

(d) purifying the DNA from the remainder of the biological material,

wherein the DNA eluting reagent comprises:

(i) a buffer;

(ii) a base;

(iii) a chelating agent; and

(iv) water.

3. The process of claims 1 and 2, wherein the solid support is contained in a vessel, wherein the vessel is selected from a group consisting of centrifuge tubes, spin tubes, syringes, cartridges, chambers, multiple-well plates, test tubes, and combinations thereof.

4. The process according to claims 1 and 2, comprising the further step of heating the solid support to greater than 60°C.

5. The method of claims 1 and 2, wherein the biological material is selected from the group consisting of eukaryotic cells, prokaryotic cells, microbial cells, bacterial cells,

plant cells, mycoplasma, protozoa, bacteria, fungi, viruses, and lysates and homogenates thereof.

6. The method of claims 1 and 2, wherein the biological material is selected from the group consisting of body fluids, body waste products, excretions, and tissues.

7. The method of claims 1 and 2, wherein the biological material is selected from the group consisting of environmental samples taken from air, water, sediment and soil.

8. The process according to claim 5, further comprising the step of counting eukaryotic cells.

9. The process according to claim 5, further comprising the step of counting prokaryotic cells.

10. The process according to claim 5, further comprising the step of counting viruses.

11. The process according to claims 1 and 2, wherein the isolating step further comprises the step of characterizing the remainder of the lysate.

12. The process according to claims 1 and 2, wherein the isolating step further comprises the step of characterizing the remainder of the biological material.

13. The process according to claim 11, wherein the characterizing step further comprises the step of monitoring impurities.

14. The process according to claim 12, wherein the characterizing step further comprises the step of monitoring impurities.

15. The process according to claims 1 and 2, further comprising the step of quantitating the purified DNA.

16. The process according to claims 1 and 2, further comprising the step of adjusting the concentration of DNA.

17. The process according to claims 1 and 2, further comprising the step of evaluating the purified DNA.

18. The process according to claim 17, wherein the step of evaluating the purified DNA further comprises the step of determining the yield of purified DNA.

19. The process according to claim 17, wherein the step of evaluating the purified DNA further comprises the step of determining the size of the purified DNA or fragments thereof.

20. The process according to claim 17, wherein the step of evaluating the purified DNA further comprises the step of determining the purity of DNA.

21. The process according to claim 17, wherein the step of evaluating the purified DNA further comprises the step of digesting the purified DNA with a restriction enzyme or other DNA modifying enzyme.

22. The process according to claim 17, wherein the step of evaluating the purified DNA further comprises the step of analyzing the sequence of the purified DNA.

23. The process according to claim 17, wherein the step of evaluating the purified DNA further comprises the step of conducting a hybridization analysis on the purified DNA.

24. The process according to claim 1, further comprising the step of amplifying the purified DNA.

25. The process according to claim 2, further comprising the step of amplifying the purified DNA.

26. A process for amplifying DNA sequences, wherein the process comprises the steps of:

(a) contacting a biological material that contains DNA with a solid support treated with a lysing matrix;

(b) treating the biological material with a DNA purifying reagent;

(c) purifying the DNA; and

(d) applying the purified DNA to an amplification system.

wherein the lysing reagent is bound to the solid support.

27. A process for amplifying DNA sequences, wherein the process comprises the steps of:

(a) contacting a biological material that contains DNA with a solid support;

(b) treating the biological material with a DNA purifying reagent;

(c) applying a DNA eluting reagent to the solid support;

(d) purifying the DNA; and

(e) applying the purified DNA to an amplification system,

wherein the DNA eluting reagent comprises:

(i) a buffer;

(ii) a base;

(iii) a chelating agent; and

(iv) water.

28. The process of claims 26 and 27, wherein the solid support is contained in a vessel, wherein the vessel is selected from a group consisting of centrifuge tubes, spin tubes, syringes, cartridges, chambers, multiple-well plates, test tubes, and combinations thereof.

29. The process of claims 26 and 27, wherein the biological material is selected from the group consisting of eukaryotic cells, prokaryotic cells, microbial cells, bacterial cells, plant cells, mycoplasma, protozoa, bacteria, fungi, viruses, and lysates and homogenates thereof.

30. The method of claim 26 and 27, wherein the biological material is selected from the group consisting of body fluids, body waste products, excretions, and tissues.

31. The method of claim 26 and 27, wherein the biological material is selected from the group consisting of environmental samples taken from air, water, sediment and soil.

32. The process of claims 26 and 27, wherein the biological material is applied to the solid support without any prior treatment of the biological material.

33. The process of claims 26 and 27, wherein the solid support is selected from a group consisting of cellulose, cellulose acetate, glass fiber, nitrocellulose, nylon, polyester, polyethersulfone, polyolefin, polyvinylidene fluoride, and combinations thereof.

34. The process of claim 33, wherein the polyolefin is a mixture of low density polyethylene and polypropylene fibers.

35. The process of claim 33, wherein the polyolefin is hydrophilic.

36. The process of claim 33, wherein the polyolefin has a charge.

37. The process of claim 33, wherein the lysing reagent comprises:

(a) a detergent;

(b) water; and optionally

(c) an RNA digesting enzyme.

38. The process of claim 33, wherein the lysing reagent comprises:

(a) a detergent;

(b) water; and optionally

(c) an RNA digesting enzyme; but

(d) does not contain a buffer.

39. The process of claim 33, wherein the lysing reagent comprises:

(a) a detergent;

(b) water; and optionally

(c) an RNA digesting enzyme; but

(d) does not contain a chelating agent.

40. The process of claim 33, wherein the lysing reagent comprises:

(a) a detergent;

(b) a chelating agent;

(c) water; and optionally

(d) an RNA digesting enzyme; but

(e) does not contain a buffer.

41. The process of claim 33, wherein the lysing reagent comprises:

(a) a detergent;

(b) a buffer;

(c) water; and optionally

(d) an RNA digesting enzyme; but

(e) does not contain a chelating agent.

42. The process of claim 27, wherein the DNA eluting reagent has a pH of at least about 10, and the combined amount of buffer, base, and chelating agent is no greater than about 20 mM, based on the total volume of the DNA eluting reagent.

43. The process of claim 27, wherein the DNA eluting reagent has a pH of no less than about 9, and the combined amount of buffer, base, and chelating agent is no greater than 20 mM, based on the total volume of the DNA eluting reagent.

44. The process of claims 26 and 27, further comprising the step of heating at greater than 60°C.

45. The process of claims 24 and 25, further comprising the step of amplifying using an amplification system.

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46. The process of claim 26, 27, and 45, wherein the amplification system comprises buffer, primers, deoxyribonucleotides, a thermostable DNA polymerase, and a programmable heating element.

47. The process of claims 26, 27, and 45, further comprising the step of quantitating the amplified DNA.

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48. The process of claims 26, 27, and 45, further comprising the step of evaluating the amplified DNA.

49. The process of claim 48, wherein the step of evaluating the amplified DNA further comprises the step of determining the size of the amplified DNA.

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50. The process of claim 48, wherein the step of evaluating the amplified DNA further comprises the step of digesting the amplified DNA with a restriction enzyme.

51. The process according to claim 48, wherein the step of evaluating the amplified DNA further comprises the step of sequencing the amplified DNA.

52. The process according to claim 48, wherein the step of evaluating the amplified DNA further comprises the step of analyzing the sequence of the amplified DNA.

53. The process according to claim 48, wherein the step of evaluating the amplified DNA further comprises the step of conducting a hybridization analysis on the amplified DNA

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